Distr.
GENERAL

IDB.10/17
14 September 1992

ORIGINAL: ENGLISH

United Nations Industrial Development Organization

Industrial Development Board

Tenth session
Vienna, 2-6 November 1992
Item 6 of the provisional agenda

UNIDO ENVIRONMENT PROGRAMME

Updated UNIDO environment programme

Submitted by the Director-General

Summary

As requested in resolution GC.4/Res.18, contains an update of the UNIDO environment programme, taking into consideration the recommendations and guidelines of the United Nations Conference on Environment and Development (UNCED), the views expressed by the General Conference at its fourth session and the results and recommendations of the UNIDO Conference on Ecologically Sustainable Industrial Development (GC.4/25/Add.1).

CONTENTS

		Paragraphs	Page
Introduction		1 - 6	1
Chapter			
I.	BACKGROUND	7 - 23	2
II.	DEVELOPMENT OBJECTIVE OF THE PROGRAMME	24	4
III.	PRIORITIES AND TARGET GROUPS OF THE PROGRAMME	25 - 26	4
IV.	PROGRAMME OBJECTIVES: OUTPUT AND ACTIVITIES	27	5
V.	IMPLEMENTATION ARRANGEMENTS	28	8
VI.	ACTION REQUIRED OF THE BOARD	29	9

Introduction

1. In its decision IDB.6/Dec.7 the Industrial Development Board approved the UNIDO environment programme (IDB.6/3) and its activities as outlined in paragraphs 3 to 28 of that document. In the same decision, the Board requested the Director-General to ensure that a broad dialogue between Member States and the Secretariat determine the guidelines for UNIDO participation and contributions to the United Nations Conference on Environment and Development (UNCED), which should be in full compliance with General Assembly resolution 44/228.

2. As reported to the General Conference (GC.4/25/Add.1), UNIDO convened the Conference on Ecologically Sustainable Industrial Development (ESID) at Copenhagen, Denmark, from 14 to 18 October 1991 to draw attention to industry-related environmental issues preparatory to UNCED. The General Conference, in resolution GC.4/Res.18, took note with appreciation of the report of the ESID Conference and requested that the Director-General transmit it to UNCED. The same decision requested the Director-General to ensure the broadest possible efforts towards achieving ecologically sustainable industrial development, in collaboration with the United Nations Environment Programme (UNEP) and other organizations and agencies of the United Nations system.

3. At UNCED, measures for global sustainable development were defined and outlined in its main document, Agenda 21. The conclusions reached at ESID do the same for industry. The updated environment programme contained in the present document (see chap. II-IV below) stresses the contribution of industry to global sustainable development. Overall, UNCED outlined in the Rio Declaration on Environment and Development and Agenda 21 a set of principles and programmes, including targets, parties responsible, mechanisms for implementation and resource requirements. Agenda 21 itself comprises 40 chapters and

V.92 56808 3643E

Distr.: 18 September 1992

115 programme areas. With its stress on the resource- and employment-generating aspects of industry and the correlation between poverty and environmental degradation, UNCED recognized the positive role of industry in promoting sustainable development, and established that environment and development issues can no longer be considered separately, but as complementary aspects of sustainable development.

4. In early 1992, the report of ESID (A/CONF.151/PC/125) became part of the official documentation of the UNCED preparatory activities. It was subsequently referred to and its content reflected in chapter 30 of Agenda 21, "Strengthening the role of business and industry", in particular in the first programme area of that chapter, "Promoting cleaner production".

5. As outlined in the document entitled Response of UNIDO to Agenda 21 (IDB.10/32), UNIDO has ongoing or planned activities reflected in a number of chapters of Agenda 21, such as human settlements and integration of environment and development into decision-making; protection of the atmosphere, environmentally sound management of biotechnology, management of hazardous waste, protection of oceans, transfer of technology and information for decision-making.

6. In the period since approval of the UNIDO environment programme, the Organization has initiated or strengthened a large number of activities by increasingly incorporating tenets of ESID. The degree to which UNIDO has achieved the objectives of the original environment programme is described in the update of the programme submitted to the General Conference at its fourth session (GC.4/25), and in the Annual Report of UNIDO, 1991 (IDB.9/10, chap. IV, paras. 37-47), and is not repeated in the present document.

I. BACKGROUND*

7. Industry plays a critical role in economic development and in enhancing the economic welfare of populations. For the world as a whole, industrial output (taken as manufacturing value added - MVA) grew at an annual rate of 3.5 per cent during the period 1970 to 1990, compared with population growth, at 1.8 per cent. The MVA of developed market economies grew at an annual rate of 2.9 per cent, while their population grew at 0.7 per cent. In the developing countries, noteworthy gains occurred in some regions, particularly East and South-East Asia, which experienced annual growth of 10.2 per cent in industrial output compared with annual growth of 2.1 per cent in population.

8. During the 1980s, the expected growth in industrial output of developing countries did not meet expectations. Overall, the share of these countries in global industrial output, in 1980 constant prices, increased only modestly, from 9.8 per cent to 14.5 per cent from 1970 to 1990, with most of that increase occurring from 1970 to 1980. Moreover, 10 countries accounted for over 60 per cent of the total MVA of all 116 developing countries, and 18 countries for nearly 80 per cent.

9. Behind these figures lies the reality that there is a strong link between poverty and environmental degradation. The UNEP publication Saving Our Planet, 1/ which records changes in the state of the environment between 1972 and 1992, points to a disturbing worsening of global environmental degradation in the 20 years since the United Nations Conference on the Human Environment held at Stockholm, Sweden, in 1972.

10. Among the most startling findings is the steep increase in global threats to the biosphere during this period, to which industrialization contributes a significant share. One such threat is the concentration in the atmosphere of carbon dioxide (CO_2), a primary contributor to the greenhouse effect, which has increased by 10 per cent over the last 20 years. As a result of increasing emissions of CO_2 and other greenhouse gases, the average global temperature will probably increase from approximately 15.2° C in the 1980s to between 16.7° C and 19.7° C by the year 2030. 2/ Approximately two thirds of CO_2 released into the atmosphere can be attributed to human activities, particularly fossil fuel combustion, and about one third of fossil fuel combustion is either directly or indirectly connected to industrial activity.

11. A second area of concern is the concentration in the atmosphere of ozone-depleting substances, in particular chlorofluorocarbons (CFCs), which have increased dramatically. CFCs are used in refrigerators and air-conditioners, in the blowing of plastic foam and as solvents. They are the main cause of ozone depletion, the name given to the decline in the stratospheric ozone that protects the surface of the earth from damaging ultraviolet radiation. Increased ultraviolet radiation promotes the growth of skin cancers and cataracts and depresses human immune systems; it also reduces crop yields, depletes marine fisheries, accelerates the deterioration of materials and increases smog. The higher concentration of CFCs also contributes to global warming.

12. A third area of concern is the increasing emissions of sulphur dioxide (SO_2) and nitrogen oxide (NO_x), which increased by 40 per cent and 100 per cent respectively from 1960 to 1980. These pollutants are the main reasons for the growing acidity of the natural environment, especially freshwater lakes, rivers, forests and soils, and they contribute to the deterioration of the man-made environment, especially buildings made of stone and those with a metallic infrastructure. These pollutants are produced mainly by the combustion of fossil fuels, primarily from power plants. It should be noted that the effects of acidification may have been masked until comparatively recently by the buffering effects of alkaline fly ash. However, the increasing use of smoke-control technology, especially electrostatic precipitators, may tend to accelerate the acid build-up by decreasing the buffering effect.

---

* This section draws largely upon ESID working paper I (ID/WG.516/7), with updated statistical information.

1/ Mostafa K. Tolba, Saving our Planet (London, Chapman and Hall, 1992).

2/ Intergovernmental Panel on Climate Change (IPCC), IPCC First Assessment Report, Volume I: Overview (World Meteorological Organization and UNEP publication, August 1990).

to foster the transfer of environmentally sound technologies, to which developing countries often lack favourable access. Agenda 21 defines environmentally sound technologies as those that "protect the environment, are less polluting, less energy and resource intensive, use resources in a more sustainable manner, recycle more of their wastes and products, and handle residual wastes in a more acceptable manner than the technologies for which they were substitutes" (Agenda 21, chap. 34, para. 1). Technology transfer itself is already a focus of the UNIDO medium-term plan as well as a tenet of ESID; UNIDO will continue to provide supportive measures that promote technology cooperation and enable the transfer of necessary technological know-how, as well as the building up of economic, technical and managerial capabilities for the efficient use and further development of transferred technology.

21. The ESID recommendations identified a number of priority areas for UNIDO activities. Among them were assistance to developing countries in the following areas: (a) building the technical and scientific institutional capacity to develop, absorb and diffuse pollution prevention techniques and cleaner production processes; (b) implementation of international environmental conventions and protocols related to industrial activities; (c) determining the environmental soundness of industrial technologies; (d) integrating environmental considerations into industrial strategies and policies; and (e) identifying appropriate financial resources to enable them to achieve ESID. Other areas identified by ESID for UNIDO action were assistance to other countries, upon request, in achieving ESID in accordance with the provisions of the UNIDO Constitution and relevant decisions of the General Conference and Industrial Development Board, and assistance in strengthening existing databases and the UNIDO capacity to coordinate the dissemination of technical and policy information on ESID. At ESID, it was stressed that where necessary and appropriate, UNIDO should work in conjunction with other organizations in the United Nations system to avoid duplication and enhance efficiency.

22. A number of global initiatives have been taken, both to identify problems and solutions associated with environmental degradation, and to secure resources for their implementation. Examples of such initiatives are the phase-out of CFCs (Montreal Protocol on Substances that Deplete the Ozone Layer), control of transboundary movements of hazardous wastes (Basel Convention on the Control of the Transboundary Movement of Hazardous Wastes and Their Disposal), and the Framework Convention on Climate Change and the Convention on Biological Diversity, the latter two having been opened for signature at UNCED. Financial enabling mechanisms include the Interim Multilateral Fund under the Montreal Protocol and the Global Environment Facility, a multi-purpose fund set up to help defray the incremental costs for developing countries to address certain global environmental problems. As agreed at UNCED, the Global Environment Facility will be restructured in accordance with chapter 33 of Agenda 21, and will be expanded to cover relevant activities under Agenda 21. UNIDO has begun to develop projects and programmes and mobilize funds from those and other multilateral sources to finance ESID projects, and expects to do more in the future as ESID-related activities accelerate.

23. The updated UNIDO environment programme (chap. II-IV below) seeks to strengthen those activities cited in paragraph 22 and other activities aimed at achieving ESID and responding to UNCED. It adheres to the framework outlined in the original document: although significant activities have already taken place under sub-programme I, it retains its status in the updated programme as it is recognized that a continuous upgrading of internal capabilities is required to meet the challenges posed by ESID and, in the larger sustainable development context, by UNCED.

II. DEVELOPMENT OBJECTIVE OF THE PROGRAMME

24. The pursuit of sustainable development is at the core of efforts to create a meaningful pattern of global development. The development objective of the updated environment programme is to ensure the ecological sustainability of industrial development by harnessing and directing the positive potential of industry in all UNIDO programmes and activities.

III. PRIORITIES AND TARGET GROUPS OF THE PROGRAMME

25. The programme contributes to the achievement of global sustainable development through promotion of the following priorities:

(a) Enunciating and updating environment-related policy and programme formulation and implementation, coupled with continuous strengthening of UNIDO staff capacities through training and recruitment;

(b) Assisting developing countries in building the technical and scientific institutional capacity to develop, absorb and diffuse pollution prevention techniques and cleaner production processes essential to making the transition to ESID;

(c) Assisting developing countries in the implementation of international environmental conventions and protocols related to industrial activities;

(d) Assisting developing countries in determining the environmental soundness of industrial technologies;

(e) Assisting developing countries in integrating environmental considerations into their industrial strategies and policies;

(f) Assisting developing countries in identifying appropriate, including new, financial resources, where possible on concessional terms, that would enable them to take necessary steps to achieve ESID;

(g) Assisting other countries, upon request, in achieving ESID in accordance with the provisions of the UNIDO Constitution and relevant decisions of the General Conference and Industrial Development Board;

(h) Strengthening existing database of the United Nations Industrial Development Organization and its capacity to coordinate the dissemination of technical and policy information on ESID.

26. The target groups for these programme priorities would be, on the one hand, the

legislative, planning and regulatory organs in developing country Governments that deal with industrialization and/or environmental issues. On the other hand, the target group is industry of developing countries, at the level of individual entrepreneurs (whether public or private sector) or industry sector or subsectoral associations, as well as research institutions and NGOs. The target groups of the programme priority (h) are the technical cooperation, industrial promotion and field units within UNIDO itself.

IV. PROGRAMME OBJECTIVES: OUTPUT AND ACTIVITIES

27. The proposed programme comprises four subprogrammes which together address the priorities outlined in paragraph 25 above.

Subprogramme I	Enhancing the Organization's capacities in rendering ESID-related assistance
Subprogramme II	Integrating environmental considerations in developing countries' industrial development strategies and policies
Subprogramme III	Promotion of cleaner production
Subprogramme IV	Technical cooperation in pollution abatement

Subprogramme I: Enhancing the Organization's capacities in rendering ESID-related assistance

I.1. Problem to be addressed

There is a growing need for UNIDO to deliver increasingly diversified ESID-related assistance to developing countries. It is therefore essential that staff knowledge be continuously upgraded in such areas as environmental and energy policy, technology, information and funding sources and that that information be incorporated in the development, appraisal, implementation and evaluation of all UNIDO programmes and activities.

I.2. Objective

To continue to enhance, through training and recruitment, UNIDO's capacity to provide effective ESID-related assistance, applying the latest solutions based on the recommendations of the ESID Conference.

I.3. Subprogramme focus

UNIDO Secretariat and field staff, United Nations and other international organizations and development agencies, counterpart staff in developing and other countries.

I.4. Outputs

(a) Effective ESID-related assistance provided by trained UNIDO staff to developing countries, particularly in the areas of cleaner production, environmental and energy policy, information and funding sources, and capability of designing, appraising, implementing and evaluating technical cooperation and investment promotion based on the same principles;

(b) Enhanced capacity to prepare technical cooperation, investment and other projects supported by national authorities for submission to international funding authorities including, inter alia, those set up to help implement international environmental conventions and protocols;

(c) Manuals, handbooks, guidelines and other documented material on pollution control, risk management, life cycle analysis, environmental economics, environmental impact assessment and other fundamental issues pertaining to sustainable industrial development for use by UNIDO and national counterpart staff;

(d) Promotional material prepared on a regular basis which presents the work of UNIDO in support of ESID in developing countries;

(e) Environmental issues fully integrated into all activities which address major themes of the UNIDO medium-term plan.

I.5. Activities

(a) Continuation of seminars and training courses for headquarters and field staff on, inter alia, cleaner production, energy efficiency and conservation, ESID policy and strategy formulation, environmental economics, and pollution monitoring and control;

(b) Integration of environmental management guidelines into all stages of the UNIDO project cycle; incorporation of methodologies for environmental impact assessment into feasibility and pre-investment studies; promotion of tools demonstrating economic and financial advantages of environmental protection and rehabilitation; continuous updating, further development and dissemination of the UNIDO Industrial and Technological Information Bank information networks and databases;

(c) Collection and dissemination to UNIDO staff and national counterparts of information on priorities of and access to funding sources for ESID;

(d) Preparation of written materials on fundamental issues pertaining to ESID for use by UNIDO and counterpart staff in designing and implementing technical assistance, investment promotion and other UNIDO projects;

(e) Preparation of bulletins, reports, speeches, lectures, press statements, letters, books, prefaces and other public statements and presentation material for use in promoting the work of UNIDO in support of ESID;

(f) Incorporation of energy, gender, economic and technical cooperation among developing countries (ECDC/TCDC) technology and other areas emphasized in the UNIDO medium-term plan, including the promotion of regional and subregional cooperation, into all ESID programmes and projects.

Subprogramme II: Integrating environmental considerations in developing countries' industrial development strategies and policies

II.1. Problem to be addressed

Developing countries could make a decisive contribution to preventing and controlling industrial pollution within their own borders and

at the global level. Yet, many developing countries lack sufficient experience to deal with environmental problems, as well as the necessary institutional infrastructure to appraise the environmental impact of industry and develop policies, norms, standards, regulations, legislation and market-based measures that would contribute to sustainable industrial development.

II.2. Objective

To enhance capacities of developing countries in the formulation of policies and strategies, in particular with regard to industry-related environmental standards and regulations combined with appropriate market-based measures, and in the conduct of industry-related environmental impact assessments and accident prevention. The successful achievement of this objective would necessitate close collaboration with other multilateral, bilateral and regional organizations active in the field.

II.3. Subprogramme focus

(a) Industrial subsectors: metallurgical and metal-finishing industries, pulp and paper, cement, textiles and tanneries, food-processing and chemical process industries, with due priority given, as stated in General Conference resolution GC.4/Res.18, to the five subsectors that were highlighted at ESID, with particular attention throughout to energy sources and use.

(b) Environmental issues that transcend geographical and subsectoral boundaries such as industrial restructuring (scale, siting, mix of production), technological options, internalization of the cost of environmental protection in price calculations, industrial emissions, primarily from energy generation (NO_x, CO_2 and SO_2), ozone-depleting substances and hazardous waste.

II.4. Outputs

(a) Guidelines, methods and manuals produced and advisory projects implemented on environmental impact assessment, accident prevention techniques and management, environmental risk management and hazardous waste management; for plants and/or subsectors at the national, subregional, regional and international levels;

(b) Guidelines on ESID-based legislation, standards, regulation, monitoring, and development and application of market-based measures, including contingency plans for the industrial subsectors listed above;

(c) Advisory projects implemented to provide options to Governments in formulating sectoral policies, using an appropriate mix of regulatory and market-based measures, to promote industries that contribute to ESID using clean and low-waste technologies;

(d) Training programmes implemented to train developing country cadres in environmental planning for industry (in particular, environmental impact assessment and monitoring) and in formulation of industry-related environmental norms, standards, regulations, legislation and market-based measures.

II.5. Activities

(a) Conducting of studies on environmental impact, alternative technologies available to alleviate that impact, in addition to the environmental protection norms and standards employed in industry in various parts of the world;

(b) Preparation of environmental protection guidelines and occupational health and safety regulations related to industry, in cooperation with other United Nations organizations and agencies;

(c) Continuous updating of the UNIDO system of databases, preparation and dissemination of guidelines, manuals and methods for introducing accident-prevention techniques and methodologies in industrial enterprises, and for safe disposal of hazardous waste, in cooperation with other United Nations agencies;

(d) Preparation of guidelines related to compliance with international environmental conventions and protocols, environmental standards, regulations and monitoring for the priority subsectors, in cooperation with other United Nations organizations;

(e) Implementation of ESID-based technical advisory projects which include the following:

(i) Review of current and planned sectoral policies, policy instruments, strategies and institutional infrastructure;

(ii) Proposal of measures for integrating ESID into regional industrial policies, in accordance with national priorities and with due consideration for the incidence of those policies (national and regional);

(iii) Integration of ESID into specific areas such as fiscal policies, financial and credit policies, regulatory policies, technology policies, spatial/location policies, transboundary regulations and policies, and environmental auditing;

(iv) Encouragement of ESID through research and development, acquisition and transfer of technologies;

(v) Promotion of education, public awareness, and information exchange on ESID policies, strategies and guidelines;

(vi) Establishment and/or strengthening of environmental impact assessment mechanisms to achieve qualitative and quantitative assessment of environmental impact of industrial activity;

(vii) Construction of information management systems for acquisition and organization of data on sources and effects of industrial pollution;

(viii) Assessment and projection of the impact of alternate ESID strategies on such socio-economic indices as population growth, income disparities, spatial variations in development and resource demands;

(ix) Strengthening of institutional capabilities to achieve ESID through expert advice and on-site training with special emphasis on the promotion and involvement of local organizations;

(f) Formulation and implementation of training programmes for developing country cadres in environmental planning, monitoring, modelling, auditing and impact assessment and in formulation of industry-related environmental norms, standards, regulations and legislation.

Subprogramme III: Promotion of cleaner production

III.1. Problem to be addressed

In the long run, as the UNCED and ESID conferences made clear, cleaner production, which emphasizes better use of human and natural resources and pollution prevention rather than end-of-pipe solutions, is more economical and conducive to sustainable development. Furthermore, in some instances, the use of cleaner technologies may actually prove more profitable to the firm. In the case of energy, greater benefit is derived from improvements in energy efficiency than from investments in pollution control. Furthermore, improved energy efficiency offers potential for reducing the emission of a broad range of pollutants. The critical gap in that respect, however, is the lack of information on technological options or the methods available to transfer them to enterprises in and Governments of developing countries.

III.2. Objective

To support the adoption of cleaner production, based on ESID, in the industrialization of developing countries.

III.3. Subprogramme focus

Industrial subsectors: metallurgical and metal-finishing industries, pulp and paper, cement, textiles and tanneries, food-processing and chemical process industries, with due priority given, in accordance with resolution GC.4/Res.18, to the five subsectors covered by the ESID Conference, with particular attention throughout to energy sources and use.

III.4. Outputs

(a) Advisory projects implemented providing technological information to Governments and/or entrepreneurs on the identification, assessment, acquisition and transfer of appropriate cleaner production technologies, including potential for ECDC/TCDC, conducted within the industrial structure and environment of the requesting developing countries;

(b) Pre-investment and feasibility studies undertaken to assess the economic viability and potential macro- and micro-economic savings of cleaner production technologies over traditional solutions;

(c) Technical cooperation projects implemented that employ cleaner production technologies;

(d) Expanded information systems within UNIDO and in appropriate developing country institutions on cleaner production technologies based on ESID, including those required for compliance with international environmental conventions and protocols (for example, non-CFC technologies);

(e) Information on appropriate, including new, financial resources, where possible on concessional terms, that would enable developing countries to have improved access to cleaner production technologies;

(f) Expanded roster of experts and database on institutional facilities providing training in the environmental upgrading of existing industries;

(g) Improved demonstration and training centres at new or existing industrial facilities and at centres of excellence where research and development suited to local industrial needs and capabilities will be strengthened;

(h) Cadres of developing country counterparts, trained to evaluate options and incorporate cleaner production technologies as appropriate in their industrialization processes.

III.5. Activities

(a) Assistance to developing countries in the identification, assessment, acquisition and transfer of pollution prevention techniques and cleaner production processes essential to making the transition to ESID, including potential for ECDC/TCDC;

(b) Demonstration of the financial and economic advantages and environmental benefits of ESID by undertaking pre-investment and feasibility studies;

(c) Provision of technical support for the design, establishment, operation, evaluation and monitoring of pollution prevention technologies and cleaner production processes and technologies;

(d) Assistance to developing countries in contract negotiation and transfer of environmentally sound technology;

(e) Strengthening existing UNIDO databases and the Organization's capacity to coordinate the dissemination of technical and policy information on ESID, including relevant information on international environmental conventions and protocols;

(f) Assisting developing countries in identifying appropriate, including new, financial resources, where possible on concessional terms, that would enable them to take necessary steps to achieve ESID;

(g) Identifying experts, institutes and training facilities and promoting their inclusion in existing UNIDO industrial information systems and in appropriate institutions in developing countries;

(h) Establishment of demonstration and training centres at new or existing industrial facilities, and providing support to centres of excellence;

(j) Training of developing country counterparts to enable them to evaluate options and incorporate cleaner production technologies into their industrialization processes.

Subprogramme IV: Technical cooperation in pollution abatement

IV.1. Problem to be addressed

Owing to social and economic circumstances, it is often not possible to implement cleaner production all at once by adopting sweeping ESID strategies and technologies in the manner outlined in subprogrammes II and III above. Instead, in particular where heavily polluting, often outdated industrial facilities already exist, it can be more economical to curb pollution rather than investing heavily to eliminate it altogether. Industrial upgrading and industrial rehabilitation selectively employ ESID technologies to contribute to pollution abatement, saving scarce resources by increasing efficient resource utilization, in particular energy, and reducing environmental degradation, especially that caused by hazardous waste.

IV.2. Objective

Building on extensive UNIDO experience in industrial rehabilitation, to control and mitigate the adverse impact of industrial pollution in developing countries.

IV.3. Subprogramme focus

(a) Industrial subsectors: metallurgical and metal-finishing industries, pulp and paper, cement, textiles and tanneries, food-processing and chemical process industries, with due priority given, in accordance with resolution GC.4/Res.18, to the five subsectors covered by the ESID conference, with particular attention throughout to energy sources and use;

(b) Pollution abatement technologies and methods relevant to more than one industrial subsector.

IV.4. Outputs

(a) Improved maintenance, operation and upgrading of existing industrial plants, selectively employing the principles of ESID based on results of environment, energy and waste audits;

(b) Technical cooperation projects, including pilot or demonstration projects, implemented to assist Governments and enterprises to adopt/adapt selected ESID programmes for pollution control, energy saving and industrial waste recycling, including as part of efforts to assist them in complying with international environmental conventions and protocols;

(c) Upgraded databases and technical manuals on generic treatment, reuse, recycling and management operations for wastes, in particular hazardous wastes;

(d) Information on appropriate, including new, financial resources, where possible on concessional terms, that would enable developing countries to employ selected ESID principles in their pollution abatement efforts;

(e) Upgraded databases and guidelines for measures and methods of preventing industrial accidents and extending operational life of plant and machinery (non-destructive testing, monitoring of condition and remote sensing), as well as guidelines for dynamic plant management;

(f) Expanded roster of experts in industrial pollution control;

(g) Training projects implemented on the handling, treatment and disposal of industrial wastes, including the selection of repository sites, and related monitoring systems.

IV.5. Activities

(a) Development and implementation of technical cooperation projects related to the maintenance, operation, upgrading and rehabilitation of industrial plants in order to reduce their environmental impact and energy consumption per unit of output;

(b) Development and implementation of technical cooperation projects, including pilot and demonstration projects, showing the efficacy of employing selected ESID pollution control, energy saving and industrial waste recycling programmes;

(c) Assistance in the implementation of international environmental conventions and protocols, by providing technical cooperation to help countries identify and implement the actions needed, as well as helping them to locate expertise and funding;

(d) Development of technical manuals and databases that address issues related to the design, function and efficiency of treatment operations for industrial wastes, as well as guidelines and methodologies for accident-prevention techniques;

(e) Development of standards and guidelines for the safe disposal of industrial, including toxic and hazardous, wastes in cooperation with other governmental and non-governmental organizations, Governments and industry;

(f) Assistance to developing countries in identifying appropriate, including new, financial resources, where possible on concessional terms, that would enable them to take necessary steps to undertake pollution abatement measures based on ESID principles;

(g) Further development of information systems for the exchange of technological information, research and development and experience in managing industrial wastes.

(h) Identification of experts for the expanded roster;

(i) Development and implementation of training projects on the handling, treatment and disposal of industrial wastes, including the selection of repository sites and related monitoring systems.

V. IMPLEMENTATION ARRANGEMENTS

28. As with the original environment programme, the basic principle is one of interdepartmental

and inter-agency cooperation in rendering effective assistance to the developing countries on specific environmental issues and problems. In July 1990, an Environment Coordination Unit was created to augment standard coordination mechanisms (UNIDO/DG/B.133). The Unit is responsible for coordinating programme management and promotion, advising technical units on project development, and resource mobilization and inter-agency contacts on environment-related issues. Although it contributes to the identification of new project opportunities arising from the integration of environment protection criteria into the production system, aside from those stemming from subprogramme I, the implementation of projects is the responsibility of the technical units in the substantive Departments. The Unit is also secretariat to a new interdepartmental Task Force on Environment, created in the wake of UNCED to advise the Director-General on the development of relevant UNIDO policies and programmes, particularly with regard to the implementation of Agenda 21 and international environmental conventions and protocols related to industry. Detailed terms of reference of the Unit are contained in annex III to Director-General's bulletin UNIDO/DG/B.156.

VI. ACTION REQUIRED OF THE BOARD

29. The Board may wish to take note of the present document.